

In Fig. 1, closed circles (●) indicate the results of rats with sham operation; and open circles (○) indicate the results of MCA-occluded rats infused with only physiological saline; closed squares (■) indicate the results of MCA-occluded rats infused with ginsenoside Rb₁ in a dose of 6 μg/day and open squares (□) indicate the results of MCA-occluded rats infused with ginsenoside Rb₁ in a dose of 60 μg/day. Data are shown by means ± SE. Statistical analysis is performed by ANOVA - Fisher's PLSD.

Fig. 2 is a figure showing ratios of cerebrocortical infarction in rats intravenously infused with ginsenoside Rb₁. Data are shown by means ± SE. Statistical analysis is performed by Mann-Whitney's U-test.

Fig. 3 consists of photographs instead of drawing, showing infarcted lesions in the cerebral cortex. A: MCA-occluded rat infused with physiological saline and B: MCA-occluded rat infused with ginsenoside Rb₁.

Fig. 4 is a schematic representation summarizing the results of examples 1, 2 and 3.

Fig. 5 is a drawing showing the region for measurement of blood vessel area in the non-infarcted ischemic penumbra of the parietal lobe in a 5 μm thick section of the brain.

Fig. 6 consists of differential interference contrast images instead of drawing, showing a photomicrograph from the penumbra on the ischemic side (i.e. ischemic penumbra) and a

photomicrograph from the corresponding region on the intact side (control side).

Fig. 7 consists of photomicrographs instead of drawing, showing the thalamic VP nucleus. A: Sham-operated animal, B: ischemic animal administered with physiological saline; and C: ischemic animal administered with ginsenoside Rb₁ (60 μ g/day). Bar indicates 100 μ m.

Fig. 8 consists of photographs instead of drawing, showing rats at 2 days after spinal cord (lower thoracic cord) injuries.

Fig. 9 indicates BBB score of rats administered with physiological saline and rats administered with ginsenoside Rb₁ (12 μ g/day and 60 μ g/day) at 7 days after spinal cord injuries.

Best Mode for Carrying Out the Invention

The present invention relates to the pharmaceutical compositions comprising ginsenoside Rb₁, its metabolites or salts thereof for prevention, treatment or therapy of diseases caused by injuries to the nervous tissues or to the spinal cord. More particularly, the present invention pertains to the pharmaceutical compositions for prevention, treatment or therapy of the following disorders; diseases caused by secondary degeneration of the nervous tissues resulting from injuries to the nervous tissues, spinal cord injury, diseases caused by traumatic injuries to the nervous tissues or the spinal cord, and demyelinating diseases caused by injuries to the nervous

tissues or the spinal cord.

Ginsenoside Rb_1 , its metabolites or salts thereof of the present invention have the actions to promote vascular regeneration and/or reconstruction, or to inhibit apoptosis or apoptosis-like cell death of oligodendrocytes. Consequently the present invention further relates to promoters of vascular regeneration and/or reconstruction, preferably the promoters of vascular regeneration and/or reconstruction after cerebral apoplexy, inhibitors of secondary nervous tissue degeneration, or to inhibitors of the apoptosis or apoptosis-like cell death of oligodendrocytes.

The present invention further relates to the pharmaceutical compositions comprising ginsenoside Rb_1 , its metabolites or salts thereof for preventing or treating diseases caused by injuries to the nervous tissues or the spinal cord by promoting vascular regeneration and/or reconstruction, preferably by promoting cerebrovascular regeneration and/or reconstruction after cerebral apoplexy, or by inhibiting apoptosis or apoptosis-like cell death of oligodendrocytes.

Further, the present invention relates to the pharmaceutical compositions comprising ginsenoside Rb_1 , its metabolites or salt thereof, for promoting vascular regeneration and/or reconstruction, the pharmaceutical compositions for prevention, treatment or therapy of the secondary degeneration of the nerve tissues, the pharmaceutical